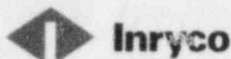


INRYCO, Inc.
Concrete Systems Division
7200 S. Narragansett Avenue
Bedford Park
Chicago, Illinois 60638-6087

312 585 7300 Chicago
312 594 7300 Suburban

TLX-72-1497 BDPK
FAX: Ext. 202



August 26, 1985

United States
Nuclear Regulatory Commission
Washington, DC 20555

Attention: Mr. Gary G. Zech
Chief Vendor Program Branch
Division of Quality Assurance,
Vendor, and Technical Training Center Programs
Office of Inspection and Enforcement

SUBJECT: Docket No. 99900731/85-01
Inspection of Inryco, Inc., Concrete Systems Division

Gentlemen:

We have reviewed the subject report and have provided responses and comments for the cited findings. We are not in agreement with these findings and have provided objective evidence to support this position.

NRC - Appendix A - Notice of Nonconformance

NRC-1. Inryco failed to assure that their purchase order to their vendor for the procurement of tendon anchor heads reflected the requirements of the Purchase Specification Y2721 issued to Inryco which required compliance to 10 CFR Part 21 and 10 CFR Part 50 Appendix B.

1. Inryco Response

- (a) Purchase Specification Y2721, from the conform specification dated 12-20-76 and up to Amendment #6 dated 5-23-82, does not cite a requirement for 10 CFR 21.
- (b) Section 115.3 of Specification Y2721 specifies that Quality Control Procedures for the work shall be submitted for approval prior to performing any work. These procedures are used to control the acquisition of material and manufacturing of post-tensioning system components (including the necessary inspections). This requirement was met upon submittal of the Project Fabrication Quality Control Manual.
- (c) As these Quality Control Procedures control all the Quality activities for the manufacturing of post-tensioning system components, no other procedures or programs, including those of vendors, can be used.

8508290231 850826
PDR GA999 EMVINRY
99900731 PDR

LE09
11

U.S.N.R.C.
Mr. Gary G. Zech
Page Two
August 26, 1985

1. Inryco Response (continued)

- (d) All of the Vendors providing manufacturing of components for post-tensioning systems, work to the approved procedures that accompany the purchase order. These vendors only provide manpower, equipment and facilities for the manufacturing process. Inryco provides the Quality Assurance, Quality Control, and Procurement activities for the components. Inryco assumes the responsibility for the application of 10 CFR 50 Appendix B and 10 CFR 21. All the original fabrication documents are turned over to Inryco and Inryco provides the required inspection and preparation of shipping documentation to accompany the components to the jobsite.
- (e) This method of control has been explained in detail to those clients and their projects, for which Inryco has been providing materials. This method of Control has never been found to be deficient in this regard. After all, it is the Client who must be satisfied that the program meets his requirements as a contractual obligation and not an individual interpretation by the NRC Audit Team. To substantiate this position, I offer in evidence, as Exhibits 1 and 2, Statements of Position given to the NRC Audit Team in 1980, during the first NRC Audit.
- (f) While the Farley Nuclear Plant contract or specification did not impose the requirements of 10 CFR 21, a preliminary report was issued on 2-4-85, Exhibit 3, evidencing Inryco's compliance with 10 CFR 21.
- (g) Inryco does not agree that a deficiency exists, as exhibited by the above response to this item. No further action is required on our part.

NRC - Appendix A

NRC-2. Inryco's measures to assure that material supplied by Western Concrete Structures (WCS) conform to purchase documents were inadequate in that Inryco did not take timely corrective action to bring WCS in compliance with the training requirements for WCS QC personnel.

2. Inryco Response

- (a) There is no evidence to substantiate such a contention. Refer to the Inryco Response provided under C.3.a.1 and C.3.b.2.
- (b) Inryco does not agree that a deficiency exists, based on the objective evidence provided by 2(a) above. No further action is required on our part.

U.S.N.R.C.
Mr. Gary G. Zech
Page Three
August 26, 1985

NRC - Appendix A (continued)

NRC-3. Measures established by Inryco to assure that the services supplied by Downey Heat Treating facilities (Downey), subvendor to WCS, were inadequate in that neither audits nor surveillances were performed by either Inryco or WCS to assure that Downey followed Inryco's heat treatment procedure and that the heat treatment furnaces conformed to MIL Spec H6875F.

3. Inryco Response

- (a) The Purchase Order to WCS at the time of the Inryco Audit imposed MIL-H6875D not MIL-Spec-H6875F. MIL-H6875D was also the procedure by which the heat treatment of anchorages was performed at that time.
- (b) Downey Steel Treating Division was qualified by WCS through Past History of Performance and appeared on the WCS Qualified Sub-Tier Supplier Summary Sheet in effect at the time of Audit. Downey Steel Treating Division first appears on the Inryco Approved Vendor List in 1974. I am not aware of the method of qualification nor can documentary evidence be provided as objective evidence of qualification. These actions predated my tenure in the Post-Tensioning Division Quality Assurance Section.
- (c) While it is true that documentary evidence cannot be provided to certify that the Downey Steel Treating Division Furnaces complied with the requirements of MIL-H6875D, there was no reason to suspect such a condition could exist. The fabrication documents specified a hardness control of Rockwell C 40 ± 2 , for which 5% of the anchorages are tested at the Heat Treater. The Heat Treater issued a Certificate of Conformance for this inspection, certifying that the heat treatment meets the requirements of MIL-H6875D. Later, each anchorhead was tested three times for hardness and the average of those readings documented on the Certification of Inspection Form. Based on the requirements of the approved Quality Control Procedure, the Rockwell hardness was the specified control, not the heat treating temperature. The tempering temperatures were based on previous experience and results of hardness testing.

U.S.N.R.C.
Mr. Gary G. Zech
Page Four
August 26, 1985

Inryco Response (continued)

3. (d) There is no evidence to suggest that the heat treatment process or the heat treating furnaces contributed to anchorhead failure at Farley Nuclear Plant. The process of heat treatment and the Quality Assurance Program controls during the time of manufacture and audit were "State-of-the-Art" at that time. There was no better knowledge available for the heat treatment of post-tensioning system anchorages.
- (e) Once WCS determined that Downey Steel Treating Division was unresponsive to quality problems, Varco International, Inc. was qualified by WCS in 1978 to perform heat treatment of anchorages. An Audit of Varco was performed in 1980 by Inryco. Refer to Exhibit 11 and Exhibit 13.
- (f) Once it was discovered that the method of grain refinement at the rolling mill could severely affect the as-hardened condition of the anchorages, Inryco immediately began a research program which culminated in revised material specifications that would prevent recurrence of the problem. Inryco also developed specific anchorage heat treating procedures, along with a comprehensive structural, non-destructive and metallurgical testing program, which relied on factors other than hardness testing for acceptability. This then, along with increased Quality Assurance documentation and heat treating strip charts, became the "State-of-the-Art".
- (h) Based on the conditions that existed at the time of anchorage manufacture and the Inryco Audit, we do not agree that a deficiency exists. While it is true that Inryco did not perform an audit of the heat treater at that time, the NRC Inspector can only speculate that one should have been performed. There was no evidence to suggest such a need. Audits were performed later for new sources, but unfortunately these were not commented on by the NRC Inspector. No further action is required on our part.

NRC - A. INSPECTION ISSUES

A. Inryco Response

It would appear that the NRC Inspection concerns the current application of the Inryco Quality Assurance Program and not the application of that program as it applied for Farley Nuclear Plant. The Farley anchorages were manufactured in 1974, 1975 and 1976 in accordance with programs that were in effect then. Hardly a fair comparison with today's requirements.

U.S.N.R.C.
Mr. Gary G. Zech
Page Five
August 26, 1985

NRC - B. INSPECTION FINDINGS

NRC-B.1. Violations

B.1. Inryco Response

No comments are required.

NRC-B.2. Nonconformances

NRC-B.2.(a) Inryco failed to assure that their purchase order to Machine Specialties for the procurement of tendon anchor heads reflected the requirements of Purchase Specification Y2721, issued to Inryco, by not including the relevant sections of the specification which required the vendors and subvendors to conform to 10 CFR Part 21 and 10 CFR 50 Appendix B.

B.2.(a) Inryco Response

Refer to the Inryco Response provided in Appendix A-1.

NRC-B.2.(b) Inryco's measures to assure that material supplied by Western Concrete Structures (WCS) conform to purchase documents were inadequate in that Inryco did not take timely corrective action to bring WCS in compliance with the training requirements for WCS QC personnel.

B.2.(b) Inryco Response

Refer to the Inryco Response provided in Appendix A-2.

NRC-B.2.(c) Measures established by Inryco to assure that the services supplied by Downey Heat Treating facilities (Downey), subvendor to WCS, were inadequate in that neither audits nor surveillances were performed and documented which would indicate that Downey followed Inryco's heat treatment procedure and that the furnaces conformed to MIL-Spec #6875F.

B.2.(c) Inryco Response

Refer to the Inryco Response provided in Appendix A-3.

NRC - C. OTHER FINDINGS AND COMMENTS

NRC-C.1. Background Information

C.1. Inryco Response

No comments are required.

U.S.N.R.C.
Mr. Gary G. Zech
Page Seven
August 26, 1985

C.2. Inryco Response (Continued)

In an effort to refute this Unidentified Comment we offer the following Exhibits as objective evidence of the types of audits that were performed. We should add that all this information was included in each of the audits in each of the respective files that the audits are stored in.

- Exhibit 4a - Corresponds to section C.2.a.; limited scope audit.
- Exhibit 4b - Corresponds to section C.2.b. of the NRC report.
- Exhibit 4b¹ - Pages 1 and 2; while this was a limited scope audit Criterion VII was audited.
- Exhibit 4b² - A limited scope audit, however Criterion VII was audited.
- Exhibit 4b³ - This was mistakenly identified as an audit. Actually it was a manufacturing surveillance and verification of audit corrective action.
- Exhibit 4b⁴ - Full scope audit also encompassing Criteria IV and VII.
- Exhibit 4c - Corresponds to section C.2.c. of the report.
- Exhibit 4c¹ - Limited scope audit.
- Exhibit 4c² - Follow-up audit also of limited scope.
- Exhibit 4c³ - Full scope audit of all 18 50 Appendix B.
- Exhibit 4d - Corresponds to section C.2.d. of the report; audit encompassing Criteria IV and VII.
- Exhibit 4e - Corresponds to section C.2.e. of the report; audit which included Criteria IV and VII.
- Exhibit 4f - Corresponds to section C.2.f. of the report; audit.

U.S.N.R.C.
Mr. Gary G. Zech
Page Eight
August 26, 1985

NRC-C.3.a. Inryco audited WCS on 12/15/76 and identified the following adverse findings:

NRC-C.3.a.1. The Inryco auditor questioned the qualifications of a QC Inspector. WCS stated that he was a graduate mechanical engineer with demonstrated ability. The Inryco auditor stated that this satisfied the immediate question, but needed other documentary evidence to be presented during a subsequent audit.

C.3.a.1. Inryco Response

WCS did not state that he, Robert Jacobsen, was a graduate engineer and it is not understood how the NRC Inspector could get this interpretation from the Audit Report. The Inryco auditor accepted a letter responding to a Bechtel Audit finding concerning this problem. Exhibit 5 will attest to the precise language used. Also attached to this Audit File was a response letter from WCS dated 12-28-76, Exhibit 6, with documentation of personnel certification, which was not mentioned in the NRC Audit Report.

NRC-C.3.a.2. The shop was not furnished with up-to-date Inryco drawings and procedures. It was determined that the quality of the components was not being affected because the later revisions only corrected typographical errors and did not influence the design.

C.3.a.2. Inryco Response

No comments required.

NRC-C.3.b. Inryco performed a follow-up audit on 8/15/77 and identified the following findings:

C.3.b. Inryco Response

Two audits were performed during the period of 8-13-77 through 8-16-77. One audit as a matter of verification of the activities for the manufacture of anchorheads. The second audit was performed as a matter of improving the qualification status of WCS as an Inryco Vendor. This was not a follow-up audit. Exhibit 7, Pages 1 of 2 and 2 of 2, are submitted as objective evidence of these facts.

U.S.N.R.C.
Mr. Gary G. Zech
Page Nine
August 26, 1985

NRC-C.3.b.1. Heat or furnace charts were being submitted as objective evidence that the Inryco procedures were being followed without evidence that the furnace thermocouples had been calibrated.

C.3.b.1. Inryco Response

There is no such statement cited in either of the two Inryco Audits. In fact, as seen in Exhibit 7, there were no findings as a result of either audit. WCS was observing the requirements of the approved Inryco Quality Programs for the manufacturing of anchorages. While Exhibit 8, Page 1 of 2 shows a reference to "Furnace Charts Supplied to Inryco" in the Remarks Area for Audit Item H.4., this was not identified as a Finding.

NRC-C.3.b.2. Inryco observed that while WCS used qualified procedures to accomplish special processes, the qualification of personnel were questionable.

C.3.b.2. Inryco Response

No such statement exists in either of the Inryco Audits. As stated previously, no findings were detected as a result of either audit. While a question mark appears in the Remarks Area for Audit Item H.2. of Exhibit 8, Page 1 of 2, it was only intended to question the need for certification of personnel performing heat treating. It wasn't required then nor is it needed today. It was not imposed by the Inryco Purchase Order and as such, while it could be questioned, it does not apply.

NRC-C.3.b.3. Similarly, Inryco determined that while the equipment and procedures used in the special process complied with the applicable codes and standards, the qualification of the personnel were questionable.

C.3.b.3. Inryco Response

Refer to the response cited in C.3.b.2. MIL-H-6875D does not impose any requirement for personnel certification, nor was it required by the Inryco Purchase Order.

U.S.N.R.C.
Mr. Gary G. Zech
Page Ten
August 26, 1985

NRC-C.3.b.4. In the QA records section, the question "Do records include closely related data such as qualifications of personnel" was answered with an individual's name and a statement that "The inspector is now in training."

C.3.b.4. Inryco Response

Exhibit 9 comments on the fact that an Inspector, Craig Spievak, is in training. Surely the NRC cannot disagree that this is objective evidence of a Quality Program in action. Just for the record, he was being trained by the Supervisor of Quality Control, R. Jacobsen, who was certified on 12-23-76. His certification is cited in Audit Item P.2.a. of Exhibit 9. The Inspector being trained was certified on 11-15-77 as verified during the audit of WCS on 8-11-80 (V80-782-1).

NRC-C.3.c. Inryco letter dated May 21, 1979, to WCS indicates the following:

Field anchor head (170 W 1B) identified PC 048 was found with extensive cracking through the walls of 80% of the wire holes and were very visible to the naked eye. The anchor head was sent to an outside laboratory (Lab). The Lab was of opinion that the cracks were caused by the quenching operating during heat treatment. Inryco personnel observed that the inner surface of the wire holes of the shop and field anchor heads do not have the 0.500R completed. Inryco stated that they would complete the operation. Inryco personnel observed one anchor head where the holes had drifted together from top to bottom. This anchor head was scrapped. Inryco requested WCS to increase their inspection in the above areas to eliminate the shipment of defective or unfinished products.

C.3.c. Inryco Response

The NRC Inspector overlooked the 5-25-79 letter by WCS responding to this problem. This will be seen as Exhibit 10. It indicates that corrective action was already being applied.

NRC-C.3.d. Inryco's telex to WCS dated 11/21/79 stated that one field head 170 W1B, Inryco heat code PY 136, heat #18381 supplied under a purchase order 21T 781-5 broke into two separate pieces, approximately 10 days after stressing. The failures noted here and in c. above, though not related to the Farley tendon problem, indicate deficiencies in the control of heat treatment.

U.S.N.R.C.
Mr. Gary G. Zech
Page Eleven
August 26, 1985

C.3.d. Inryco Response

It is interesting to note that the NRC Inspector has ascribed the 2 unrelated anchorhead problems to deficiencies in the control of the heat treatment. Further analysis would have yielded the following information:

1. Problems with 2 anchorheads out of approximately 2,000 is not suggestive of a developing adverse trend.
2. The problems cited are totally unrelated. Anchorhead PC048 was discovered during routine final inspection. Anchorhead PY 136 failed sometime after being stressed.
3. Anchorhead PC048 was analyzed and found to have occurred as a result of quench-cracking, which has nothing to do with the control of the heat treatment. Other anchorheads in this heat treatment batch did not have quench cracks.
4. Anchorhead PY136 was analyzed and after much deliberation, it was determined that the problem was caused by the use of Vanadium as the principal grain refinement method by the steel mill. Other anchorheads in this heat treatment batch did not crack after being stressed.
5. Anchorhead PC048 was heat treated by Downey Steel Treating.
6. Anchorhead PY136 was heat treated by Varco International. Varco International was audited on 11-3-78 by WCS to perform heat treating. Refer to Exhibit 11.

NRC-C.3.e. Inryco interoffice memorandum from D. Waitkus (QA Supervisor) to G. Davis (Project Manager) dated August 18, 1980, recommended the termination of Western Concrete Structures (WCS) as a source of supply of anchor heads or any other services based on the following:

C.3.e. Inryco Response

The interoffice memorandum cited is actually a summary of an audit performed by Inryco of WCS on 8-18-85. Refer to Exhibit 12 and Exhibit 13.

U.S.N.R.C.
Mr. Gary G. Zech
Page Twelve
August 26, 1985

NRC-C.3.e.1. WCS did not maintain the requirements of their QA program including controls of their subtier suppliers and documentation.

C.3.e.1. Inryco Response

No comment required.

NRC-C.3.e.2. The WCS staff was reduced to a minimum and only one inspector was available to check their incoming and fabricated products. The person who acted as the Quality Control (QC) inspector spent less than 10% of the time on QC activities. Review and verification of paper work including heat treatment records was inadequate resulting in incomplete documentation packages.

C.3.e.2. Inryco Response

The language is not as cited in the summary document, however, it is essentially correct. Our concern was that not enough time was being allocated to Inryco anchorages.

NRC-C.3.e.3. WCS had various problems with two numerical controlled drills, which resulted in incorrect holes being drilled.

C.3.e.3. Inryco Response

The concern here was not for those anchorages which were rejected, but for the cost value of the material as regards scrap value and delays in securing new material.

NRC-C.3.f. The NRC inspectors informed Inryco of the information furnished in subparagraphs a and b, Inryco identified an inadequacy in WCS training program in 1976 and this inadequacy continued in 1977 without being corrected; therefore, Inryco's corrective actions to bring WCS in compliance with training requirements were not timely. Inryco's purchase documents required WCS to implement a QA program meeting the requirements of 10 CFR 50 Appendix B. Section VII of the Inryco QA program established measures to assure that vendors comply with requirements in the procurement documents. The inspectors informed Inryco that failure to take timely corrective action to bring WCS in compliance with procurement documents was in noncompliance with Criterion VII of 10 CFR 50 Appendix B and Section VII of the Inryco QA manual.

U.S.N.R.C.
Mr. Gary G. Zech
Page Thirteen
August 26, 1985

C.3.f. Inryco Response

We believe that we have provided enough objective evidence or explanation of our operation to refute the above contention.

NRC-C.3.g. Relative to the heat treatment services provided by Downey Heat Treatment Company (Downey), no objective evidence was provided to the NRC inspectors that either Inryco or WCS verified (through surveys by independent agencies) that the heat treatment furnaces were in conformance with MIL SPEC 6875F. Records furnished to the NRC inspectors indicated that Inryco relied on the furnace heat treatment charts to verify compliance with their procedures without knowledge that the thermocouples in the furnaces were within calibration limits. The inspectors informed Inryco that inadequate measures were established to verify that Downey, the subvendor to WCS complied with the purchase order requirement, specifically, compliance to MIL SPEC 6875F and that this was another example contrary to 10 CFR 50 Appendix B, Criterion VII.

C.3.g. Inryco Response

- (a) While no objective evidence was provided to show that Downey had in fact maintained calibrated equipment, there was no reason to suspect such a condition could exist. Downey had heat treated thousands of anchorheads to the required hardness without any quality problems. When Downey did not respond to the quench-crack problems, they were disqualified in November of 1978 and Varco International was then qualified to perform the work. Varco had been audited by both WCS and Inryco.
- (b) To my knowledge Downey never worked to the requirements of MIL-H-6875F, as their contract was based on MIL-H6875D and their Certificate of Conformance attested to that fact. Varco International was the first heat-treater to be contracted to heat treat in accordance with MIL-H-6875F. Varco continued to provide heat treatment of WCS anchorages for Inryco until the time that the fabrication contract was cancelled.

U.S.N.R.C.
Mr. Gary G. Zech
Page Fourteen
August 26, 1985

- C.3.g.(c) Inryco did not rely on the heat treatment charts to verify compliance with the procedures. The acceptance of the anchorheads at the time, was based on the achieved Rockwell C hardness of 42 ± 2 . All the Inryco anchorheads met that requirement.
- (d) When other problems manifested themselves such as the Vanadium grain refinement method, the potential for too great a tensile strength, reduced ductility, it was after Varco was audited and after verification that the furnaces, thermocouples and recording charts were calibrated.
- (e) While we might be criticized for not providing objective evidence of furnace and equipment calibration for Downey, the State-of-the-Art for auditing prior to 1979 did not require the same intensity for auditing as seen today. There was no reason to suspect a problem and up until late 1978 Downey was responsive to any quality problem associated with their heat treating. As strange as it might seem, anchorhead failures were not seen until after Varco had been audited, however the problem was associated with chemistry and not heat treating. We do not agree with the NRC position that we were in violation of 10 CFR 50 Appendix B, after all our operation was audited and found to be acceptable by each of our clients to be in keeping with the terms of their contract and specifications.

NRC-C.4. Review of Management Audits

Audits were performed by Inryco upper management to review the status and adequacy of the Concrete Systems Division. Audits performed by their customers and results of internal audits were used in the performance of the review. The results of the audits were reviewed by the Vice President as acknowledged by his signature on the document. This audit complies with the requirement stated in paragraph 7 of Criterion 2 of the Inryco QA manual.

No noncompliances were identified in the above area.

C.4. Inryco Response

No comment required.

U.S.N.R.C.
Mr. Gary G. Zech
Page Fifteen
August 26, 1985

NRC-C.5. Review of Inryco's Purchase Orders

The inspectors reviewed the purchase orders initiated by Inryco to vendors including vendors to sub-vendors relative to the procurement of post-tensioning components and services to comply with Purchase Specification Y2721 titled "Specification for Post-Tensioning Work (Sargent & Lundy, Agent for Public Service Company of Indiana, Inc., Marble Hill Generating Stations Unit 1 and 2). Paragraph 115 of this specification states that the Quality Assurance criteria including 10 CFR Part 21 applies to both contractors and subcontractors. Inryco attaches their Form D-904 to their purchase order to convey requirements specified in Y2721. Form D-904 is a checklist containing numerous general and special requirements including the applicability of 10 CFR Part 21 and 10 CFR Part 50 Appendix B. The objective of this review was to ascertain whether Inryco conveyed the applicability of compliance to 10 CFR Part 21 and 10 CFR Part 50 Appendix B to their vendors and whether the vendors in turn forwarded these requirements to their subvendors.

C.5. Inryco Response

- (a) Paragraph 115 was never imposed as a working specification for Inryco. When this document was issued Inryco was in the process of renegotiating the Marble Hill contract to reflect the change of scope. The original contract had been terminated and Inryco was not successful in being awarded a new contract. Any material that had been acquired for this project and subsequently held until all the renegotiations were completed, was then turned over to PSI under separate conditions of control. These materials met the requirements imposed by PSI and were as such accepted.
- (b) The issue of applicability of 10 CFR 21 has been discussed earlier in Appendix A. Inryco maintained the responsibility for the application of 10 CFR 21. This method of control has not been found deficient and was acceptable to all of our customers.

U.S.N.R.C.
Mr. Gary G. Zech
Page Sixteen
August 26, 1985

NRC-C.5.a. The following purchase orders (PO) were reviewed.

C.5.a. Inryco Response

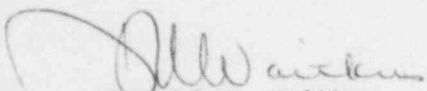
Inryco maintained all the quality control and quality assurance activities for each of the 10 purchase orders listed. We do not feel that 10 CFR 21 applies in these circumstances. As none of these suppliers worked to anything but Inryco Quality Procedures and with Inryco providing Quality Assurance and Inspection for the materials being supplied, 10 CFR 50 Appendix B does not apply either. 10 CFR 50 could only apply for those vendors who were qualified to provide work or materials to the requirements of their Program. In as much as these vendors could and did work only in accordance with the approved procedures, no deficiencies exist.

Conclusion:

Had the Supervisor Quality Assurance been available to present the objective evidence compiled in this response, I feel confident that the NRC Inspectors would have left with a better understanding of the Inryco operation and all of this could have been avoided.

Please accept my apologies for the delay in responding to your letter.

Sincerely,



Donald W. Waitkus
Supervisor, Quality Assurance

DWW:lgw

cc: W. Corson
J. Heise

312 762 2121

EXHIBIT 1 of 2

THIS IS
A COPY



Inryco

STATEMENT OF POSITION

TO: NRC Regions IV Audit Team

Date: November 21, 1980

Inryco has been made aware that the NRC audit team conducting the audit of Inryco, which began on November 17, 1980, has evaluated the information it received concerning Inryco's quality assurance program ("Q.A. Program") against the provisions of 10 C.F.R. Part 50, App. B. As previously stated by Inryco to the NRC audit team, the provisions of 10 C.F.R. Part 50, App. B apply directly only to applicants or licensees of the NRC.

The foregoing statement is based upon the express language of 10 C.F.R. Part 50, App. B which states at division I thereof:

The applicant [or licensee] shall be responsible for the establishment and execution of the quality assurance program. The applicant may delegate to others such as contractors... the work of establishing and executing the quality assurance program, or any part thereof, but shall retain responsibility therefor... Because of the many variables involved... the quality assurance program may take various forms....(footnotes omitted, emphasis added)

There is not one word in Appendix B which places any responsibility on the contractor.

Consistent with the quoted language above, Inryco's Q.A. Program is a matter of contract between Inryco and its customer, the applicant. Accordingly, in order for the applicant to discharge its duties, each and every part of Inryco's Q.A. Program must be submitted to the applicant for applicant to ascertain compliance with its NRC approved quality assurance program, and Inryco's program is subject to changes requested by the applicant.

THIS IS
A COPY

EXHIBIT | 202

Only after the applicant has thoroughly reviewed and approved all parts of Inryco's Q.A. Program, including Inryco's organizational structure; document control procedures for quality control, traceability and testing inspection, handling and storage, and non-conformances; and all other aspects of the Q.A. Program, can the Q.A. Program be deemed acceptable and in confirmation with the applicants program as approved by the NRC under 10 C.F.R. Part 50, App. B. Changes in the Q.A. Program can be instituted only with the approval or at the initiation of the applicant.

As the NRC acknowledged in adopting 10 C.F.R., Part 50, App. B, a quality assurance program can take various forms, accordingly ultimate responsibility for a particular quality assurance program must lie with the applicant in order to avoid confusion among potentially inconsistent quality assurance programs under which Inryco may be performing for different applicants at the same time. Likewise, if App. B applied directly to a contractor, there could be job site confusion caused by inconsistent quality assurance programs of the applicant and the various contractors. The provisions of 10 C.F.R. § 50.34(a)(7) requires a description by the applicant of the quality assurance program. Making a contractor expressly responsible for compliance with App. B is not only contradictory to the language quoted above, but does not further any regulatory function. A contractor's quality assurance program will be subject to NRC review in one of two ways, either in reviewing a part of the applicant's quality assurance program submitted pursuant to 10 C.F.R. § 50.34(a)(7), or in auditing the applicant's performance under its quality assurance program. In both instances, the ultimate responsibility belongs to the applicant.

Inryco has operated in conjunction with its customers exactly as described in the preceding paragraph. No objection has ever been voiced by any Region of the NRC. All work subject to quality assurance standards is performed pursuant to procedures approved by Inryco's customer. Inryco's Legal Department, has confirmed with the NRC that App. B has direct application only to applicants or licensees. In this regard, a copy of a letter to Mr. Wayne Reinmuth of the NRC is attached hereto.

To the extent that any part of the findings of the NRC audit team is based upon the standards of 10 C.F.R., Part 50, App. B, Inryco takes exception thereto.

THIS IS
A COPY

EXHIBIT 2



Inryco

November 19, 1980

Inryco has taken every opportunity to cooperate with the NRC and make its inspection run as smoothly as possible. Based upon the statements and inquiries of the NRC's representatives, we believe that our cooperation has not been reciprocated and indeed, the NRC arrived at Inryco with preconceived ideas concerning our Quality Assurance Program and that the audit is being used to substantiate these preconceived opinions. It would appear that the NRC has an inadequate understanding of and appreciation for the contractual obligations that exist between Inryco and its clients. This lack of understanding further inhibits the NRC's ability to equitably audit Inryco's Quality Assurance Program. In addition, the NRC is applying against Inryco an inappropriate legal standard, in as much as, the provisions of 10CFR, Part 50, Appendix B applies directly to Inryco's clients only.

By way of example, the NRC has intimated that Inryco used improper procedures in connection with the heat treatment of certain fine grained Vanadium bearing steel and has initiated criticizing questions based upon knowledge as it exists today, rather than as it existed at the time the work was performed. We believe such criticism to be prejudicial to Inryco.

Another example of 20-20 hindsight criticism can also be cited. The NRC has asked Inryco personnel why Inryco considered certain test reports in connection with the anchorhead problem at Byron/Braidwood projects in Illinois to be proprietary. This question bears no relationship to any valid audit function of the NRC. It also suggests that the NRC is also acting on behalf of a third party. Inryco believes that the NRC is abusing its right to inspect.

Inryco intends to continue its cooperation with the NRC. In this regard, Inryco will continue to make available all relevant records, premises, activities and basic components as prescribed by 10CFR, Section 21.41. Inryco has instructed its personnel, however, that all questions concerning any inspected material and documents are to be forwarded to E. Davis. Inryco reserves the right to suspend or terminate the NRC's inspection at such time in the future if it deems necessary.

INRYCO, Inc.
Concrete Systems Division
7200 S. Narragansett Avenue
Bedford Park
Chicago, Illinois 60638-6087

312 585 7300 Chicago
312 594 7300 Suburban

TLX-72-1497 BDPK
FAX: Ext. 202

EXHIBIT 3

THIS IS
A COPY



Inryco

February 4, 1985

United States Nuclear Regulatory Commission
179 Roosevelt Road
Glen Ellyn, IL 60137

Attention: Director, Regional Office

SUBJECT: Alabama Power Company
Joseph Farley Nuclear Plant - Unit 2
Compliance with 10CFR Part 21

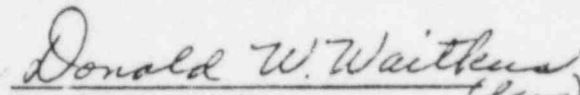
Gentlemen:

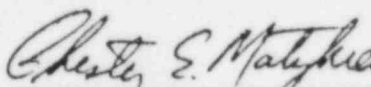
On January 28, 1985 the Alabama Power Company reported an apparent failure of a post tensioned tendon on the subject plant. A subsequent investigation revealed that another tendon anchor from the same heat had cracked but has not failed.

Inryco is participating in an investigation to determine the cause of the anchor failure. Meanwhile, in keeping with 10CFR21, Inryco is alerting you of its involvement with the problem.

The anchorages that failed or cracked were furnished to Inryco by Western Concrete of Gardena, California. Further information will be forthcoming in conjunction with the Alabama Power investigation.

INRYCO, INC.


Donald W. Waitkus (lgw)
Supervisor, Quality Assurance


Chester E. Matykiewicz
Responsible Officer

lgw

bcc: J. W. Heise
T. Jenkins
H. Hendrickson

cc: Mr. George Hairston
Alabama Power Co.
Flintridge Bldg.
5200 Flintridge Road
Fairfield, AL 35064

5502080505
25pp

EXHIBIT 4aAUDIT CRITERIA**THIS IS
A COPY**

- ☐ I. Organization
- ☐ II. Quality Assurance Program
- ☐ III. Design Control
- ☐ IV. Procurement Document Control
- ☒ V. Instructions, Procedures and Drawings
- ☒ VI. Document Control
- ☐ VII. Control of Purchased Material, Equipment and Services
- ☒ VIII. Identification and Control of Material, Parts and Components
- ☒ IX. Control of Special Processes
- ☒ X. Inspection
- ☒ XI. Test Control
- ☒ XII. Control of Measuring and Test Equipment
- ☒ XIII. Handling, Storage and Shipping
- ☒ XIV. Inspection, Test and Operating Status
- ☒ XV. Nonconforming Materials, Part or Components
- ☒ XVI. Corrective Action
- ☒ XVII. Quality Assurance Records
- ☐ XVIII. Audits
- ☐ XIX. Technical Specifications

NOTE: Audit Team Leader may modify this scope as required during the conduct of the audit. Notification to this effect shall be reported to the Inspection Supervisor, Audits, in the SFHO.

Supplier INLAND RYERSON

Location MELROSE PARK, ILLINOIS

Type Audit PROGRESSIVE (P-2)

EXHIBIT 4b¹**Gilbert/Commonwealth** engineers and consultants

GILBERT ASSOCIATES, INC., P. O. Box 1498, Reading, PA 19603/Tel. 215-775-2600/Cable Gilasoc/Telex 836-431

cc P. Johnson

October 7, 1981

CGGV-3334 QA

**THIS IS
A COPY**

Mr. D. Waitkus, Manager
Quality Assurance
INRYCO
7200 S. Narragansett
Bedford Park, Illinois 60638

Re: South Carolina Electric & Gas Company
V. C. Summer Nuclear Station Unit #1
Quality Assurance Pre-Award Survey

Dear Mr. Waitkus:

The purpose of this letter is to confirm our previous discussion concerning a pre-award survey of INRYCO's Quality Assurance program. This survey, which will be conducted by Mr. W. F. Olsen and Mr. C. W. Dawson, has been scheduled for Wednesday, October 14, 1981.

Your program will be assessed to evaluate qualitative effectiveness and verify implementation of applicable QA program requirements defined in South Carolina Electric and Gas Company Specification QA-1, as indicated below:

1. Organization
2. Program and Planning
3. Design Control
4. Procedures, Instructions, and Drawings
5. Control of Purchased Materials, Equipment, and Services
6. Identification of Materials, Parts, and Components
7. Control of Special Processes
8. Control of Inspections, and Tests
9. Document Control
10. Control of Measurement, Inspection & Test Equipment

Mr. D. Waitkus, Manager

CGGV-3334 QA

October 7, 1981

2

2 of 2
EXHIBIT 46¹

11. Control of Nonconforming Work, Material, Parts or Components
12. Documentation and Records
13. Handling, Storage, and Shipping
14. Corrective Action
15. Audits

**THIS IS
A COPY**

In addition to the above, the survey team will discuss contractual QA requirements such as Procedure Submittal and Acceptance, Release for Fabrication, Required Documentation, Inspection Notification, etc.

Your cooperation in making available appropriate personnel and records to support the above agenda will be greatly appreciated.

Very truly yours,

R. J. Hoffert
J. R. Goodbred
Quality Specialist
Quality Assurance Division

R. J. Hoffert
R. J. Hoffert
Program Manager
Quality Assurance Division

JRG/RJH:gf

cc: D.R. Moore
W.A. Williams
V.C. Summer
O.W. Dixon
C.A. Price
T.C. Nichols, Jr.
NPCF/Whitaker
A.A. Smith
PRS/J.M. Woods III (2)
C.M. Reynolds
H.E. Yocom
R.J. Hoffert
J.R. Goodbred
W.F. Olsen
C.W. Dawson
301.8

SOUTH CAROLINA ELECTRIC & GAS COMPANY

POST OFFICE BOX 764

COLUMBIA, S. C. 29218

September 2, 1983

CC. T. Felder
V. Kaso
R. Sierviega
A. Bruehling

CGSV-3095-QA
File: 300.5.1

Mr. Harry F. Hendrickson
Project Manager
INRYCO
7200 S. Narragansett Avenue
Bedford Park
Chicago, Illinois 60638

THIS IS
A COPY.

EXHIBIT 4b²

Subject: V. C. Summer Nuclear Station Unit #1
SCE&G/QA Audit Agenda

Dear Mr. Hendrickson:

This is to confirm our arrangements to visit your facility to perform an audit of your pre-surveillance jack calibration and your QA Program on September 13-14, 1983. Messrs. Tim Franchuk and William McCrackin will be the two auditors.

Our audit will be based on 10CFR50, Appendix B and your own QA Manual. The following criteria will be covered:

- QC & Engr — 1. Witness jack calibration
QC & Purch — 2. Control of purchased materials, equipment and services
QC — 3. Control of inspection and testing
QC — 4. Control of measuring and test equipment

If you have any questions, please call.

Sincerely,

T. B. Franchuk

T. B. Franchuk
Surveillance Specialist

D. R. Moore
D. R. Moore, Manager
Quality Assurance

TBF:DRM:ks

cc: V. C. Summer
T. C. Nichols, Jr.
O. W. Dixon, Jr.
B. G. Croley
W. A. Williams
NPCF/Whitaker
D. A. Lavigne
File

FILE ORIGINAL IN	
COPIES TO:	<i>Hendrickson</i>
	<i>Sierviega</i>
	<i>Bruehling</i>
	<i>Thompson</i>
	<i>Waitkin</i>
INPUT REQUEST	
BY (DATE)	
FILE COPIES IN CATEGORY FILES:	

SOUTH CAROLINA ELECTRIC & GAS COMPANY
QUALITY ASSURANCE AUDIT REPORT

UNIT: V. C. Summer Nuclear Station, Unit #1

AREA OF SURVEILLANCE: Witness the post calibration of the stressing ram/jack #9362 and #9365

DATE OF SURVEILLANCE: January 13-14, 1984

LOCATION: INRYCO, Inc.
7200 S. Narragansett Avenue
Chicago, Illinois 60638

SURVEILLANCE REPRESENTATIVE: Timothy B. Franchuk
Surveillance Specialist

PERSONNEL CONTACTED: Harry Hendrickson
Hank Gorawski

THIS IS
A COPYPURPOSE:

The purpose of this manufacturing surveillance was to witness the post calibration of the stressing rams/jacks that were used during the reactor building post tensioning tendon surveillance at the V. C. Summer Nuclear Station, Unit #1. In addition to the manufacturing surveillance, the audit response submitted by INRYCO was verified to close the audit findings identified on SCE&G/QA surveillance #0983-5017000-00 performed September 13-14, 1983.

SUMMARY:

The stressing rams/jacks #9362 and #9365 used during the reactor building post tensioning tendon surveillance were calibrated in accordance with Specification #SP-228-044461-00 and the INRYCO surveillance program, and Procedure #QA 12.8.G. The actions taken by INRYCO to closed findings 1 through 4 were verified by the auditor. The response and actions were found to be acceptable and findings 1 through 4 are considered closed.

ITEMS PRESENTED FOR INSPECTION:STRESSINGRAM/JACKLOAD CELLCALIBRATING GAGE

#9362	1000 Ton	Brewer #418 due 4/8/84	Heise Digital #S7-8462 due 1/30/85
#9365	1000 Ton	Brewer #418 due 4/8/84	Heise Digital #S7-8462 due 1/30/85

UNIT: V. C. Summer Nuclear Station, Unit #1
DATE OF AUDIT: October 4-5, 1984
AREA AUDITED: Inryco, Inc.
7200 S. Narragansett Avenue
Bedford Park, ILL 60638
AUDITORS: F. N. Singson, Team Leader
Ron Dahl, Team Member
PERSONNEL CONTACTED: * Don Waitkus, Supervisor, QA
* Joe Korkosz, QC Inspector
* Connie Brooks, QE Inspector
** Harry F. Hendrickson, Project Manager
** Ronald D. Hough, Sales Engineer

- * Attended the preaudit and postaudit conference
- ** Attended the preaudit conference

PURPOSE:

This audit was conducted to assess the implementation and effectiveness of the Inryco, Inc. Quality Assurance Program in the following areas:

- Organization
- QA Program
- Design Control
- Procurement Document Control
- Instructions, Procedures and Drawings
- Document Control
- Control of Purchased Material, Equipment, and Services
- Identification and Control of Material, Parts, and Components
- Control of Special Processes
- Inspection
- Test Control
- Control of Measuring and Test Equipment
- Handling, Storage and Shipping
- Inspection, Test and Operating Status
- Nonconforming Materials, Parts and Components
- Corrective Action
- Quality Assurance Records
- Audits
- Spare and Replacement Parts
- Field Service
- 10CFR, Part 21
- Personnel Reliability Screening Program

SUMMARY:

Inryco, Inc. of Bedford Park, Illinois, supplier of concrete reinforcing steel products, post tensioning product and post tensioning system in service inspection, demonstrated that they have implemented a QA program



Commonwealth Edison Co.
Braidwood Station
RR 1, Box 81
Braceville, IL 60407
Telephone 815/458-2801

Don Waitkus.
Audit File

September 21, 1976
BRD #348

EXHIBIT 4c¹

TO: ☒ P. Rhinehart
Manager Quality Assurance
INRYCO - Concrete Systems Group

SUBJECT: Quality Assurance Audit

REF: Telecon Legner/Rhinehart, 9/21/76

**THIS IS
A COPY**

Dear Mr. Rhinehart:

It is the intent of the Commonwealth Edison Quality Assurance Department to accomplish an audit of your organization. This audit will be performed to determine the extent of implementation of selected portions of your Quality Assurance Program and compliance to various procedures, as they apply to S&L Specifications F/L 2721 and F/L 2876.

Mr. Ronald J. Legner has been tasked with the accomplishment of this audit and, as such, will make the necessary arrangements as agreed upon in the referenced conversation.

Should you have any questions concerning the conduct of the audit, please contact Mr. Legner or myself at Braidwood Station (815-458-2801).

Robert J. Gausden
Q.A. Supervisor
Braidwood Station

RJL:lcs

CC: W. J. Shewski
G. F. Marcus
P. Johnson - INRYCO
G. Chadha - INRYCO
R. Cosaro
R. J. Gausden/Q.A. File

PURPOSE:

This follow-up audit of INRYCO Post Tensioning Division on 1-13-77 was performed to review corrective actions resulting from an audit carried out on 10-29-76.

SUMMARY:

The subject audit was carried out using questions taken from a previously approved checklist. The questions used were those which previously resulted in audit findings, observations, or were previously not applicable. Of the nine questions asked, one resulted in an observation. This observation will require a written response indicating the action taken to improve the condition and date when the action was, or will be completed. A written reply will be required fifteen days after receipt of this report.

THIS IS
A COPY

COMMONWEALTH EDISON COMPANY
QUALITY ASSURANCE AUDIT
OF INRYCO, INC.
MARCH 21, 22 and 23, 1984

EXHIBIT 4C³

G.O. AUDIT G-84-11

A Quality Assurance Program audit was performed of Inryco, Inc. Concrete Reinforcing Products, 7200 South Narragansett Avenue; Chicago (Bedford Park), Illinois on March 21-23, 1984. The purpose of the audit was to determine if Inryco, Inc. has been implementing the requirements of their approved Quality Assurance Program latest accepted revision (3) dated 4-1-81.

THIS IS
A COPY

The audit checklist contained questions addressing the 18 Criteria of 10CFR50, Appendix B and all sections of the Inryco, Inc. Quality Assurance Manual. The checklist consisted of twenty (20) questions. Eighteen of the questions were found acceptable, one (1) found to be an Observation, and one (1) found non-applicable to Inryco, Inc. activities.

A detailed summary of the Observation is given in Exhibit A. Exhibit B lists the personnel who attended the audit Entrance and Exit meetings and also additional personnel contacted during the performance of the audit.

The complete cooperation and Professional manner of all Inryco, Inc. personnel contacted during the performance of this Audit allowed for a timely completion and was greatly appreciated. All personnel appeared knowledgeable of subject, responsibilities, and "Quality" conscious in the performance of their duties. The files that were reviewed were neat, orderly and controlled, and the retrievability of the records was good.

It should be noted that Inryco Inc. Concrete Reinforcing Products, has not performed any Post Tensioning site-work for Commonwealth Edison or produced Post Tensioning materials since June of 1982. The present scope of work for Commonwealth Edison is limited to rebar and structural fabrication material being sent to Byron and Braidwood.

It appears from the documented objective evidence obtained during the audit that Inryco, Inc. is currently implementing their Quality Assurance Program. The only concern derived from the audit was the inability to know where two (2) micrometers and one (1) thermometer were from the records. The calibration records indicated that they were out-of-calibration status, but it was not definitely known nor documented as to their location. As discussed in the Exit meeting Instrument calibration records will be controlled by just one Quality Engineer which will allow for more quicker and accurate traceability of instrumentation used on the construction site and sent back for recalibration. An additional comment would be for Joe Korkosz, Quality Engineer to begin signing documents as a Level II. It was verified while reviewing his training and qualification documents that he is an ANSI N45.2.6 certified Level II Inspector, but yet is signing documents as Level I. As discussed this can easily be corrected.

In their response Inryco, Inc. is requested to delineate the corrective action as discussed in the Exit meeting and also address action to prevent recurrence.

1.0 SCOPE OF AUDIT

The scope of this audit addressed the INRYCO, Incorporated, Quality Assurance Program and its implementation as related to the following criteria of 10CFR50 Appendix B and Appendix A of contracts 75C53-85380, Prestressing System for Primary Containment Structures for Bellefonte Nuclear Plant, and 75C57-86118, Miscellaneous Steel Embedded Parts for Watts Bar Nuclear Plant.

- I. Organization
- III. Design Control
- IV. Procurement Document Control
- VII. Control of Purchased Material Equipment and Services
- VIII. Identification of and Control of Material, Equipment, and Services
- IX. Control of Special Processes
- X. Inspection
- XI. Test Control
- XII. Control of Test and Measuring Equipment
- XIII. Handling, Storage, and Shipping
- XIV. Inspection, Test, and Operating Status
- XV. Nonconforming Materials, Parts, or Components
- XVI. Corrective Actions
- XVIII. Audits

THIS IS
A COPY

Checklists were prepared which correlated the INRYCO QA Manual, the TVA contracts, and Appendix B to 10CFR50 and were used to ensure depth and continuity of the audit.

2.0 EVALUATION OF VENDOR'S QA PROGRAM

2.1 QA Manual

The INRYCO Quality Assurance Manual was submitted to TVA for review and approval as part of their bid package for this contract and was subsequently approved by Civil Engineering Branch. TVA QA had no comments to make on the INRYCO Quality Assurance Manual as a result of this audit.

2.2 Implementation

The INRYCO QA Program was not reviewed in its entirety during this audit because of the nature of the contract and the progress made on this contract. The audit was restricted, therefore, to areas which could be reviewed for successful implementation of the QA Manual.

One general comment to make on this QA Program concerns general record storage. The QA records are identifiable and retrievable, however, the filing method is somewhat lax and will not meet the record storage requirements for future contracts. It is recommended that record storage at both facilities inspected

AUDIT REPORT

Audit Report Issue Date: 9/25/84

Activity Audited: Inryco, Incorporated
7200 South Narragansett Avenue
Bedford Park, Illinois 60638

Audit Report No.: QAA/889-1

Dates of Audit: September 11-13, 1984

Auditors: Mr. T. L. Kosmatin (Lead Auditor)
Mr. J. R. Eldreth (Auditor-in-Training)

Personnel Contacted:

Mr. A. S. Brueltig - Purchasing
"*"Mr. D. W. Waitkus - Supervisor, Quality Assurance
"*"Mr. H. F. Hendrickson - Project Manager
"*"Mr. R. D. Hough - Sales Engineer
"*"Mr. J. W. Korkosz, Jr. - QC Representative

"*"Attended Preaudit and Postaudit Meetings

Scope: The purpose of this audit was to verify that Inryco, Incorporated located in Bedford Park, Illinois has established and implemented a Quality Assurance Program in compliance with the requirements of ANSI N45.2. The areas audited included: (1) Organization; (2) QA Program; (3) Procurement Document Control; (4) Instructions, Procedures and Drawings; (5) Document Control; (6) Control of Purchased Materials; (7) Identification and Control of Materials; (8) Inspection; (9) Test Control; (10) Control of Measuring and Test Equipment; (11) Handling, Storage and Shipping; (12) Inspection, Test and Operating Status; (13) Control of Nonconformances; (14) Corrective Action; (15) QA Records; (16) Audits; (17) Training; and (18) Design Control.

Summary: Within the scope of this audit, the Inryco, Incorporated Program was evaluated as effective and satisfactory to provide labor, equipment and field supervision as necessary to perform concrete post tensioning surveillance for the Brunswick Nuclear Project. No nonconformances were identified.

**THIS IS
A COPY**



EXHIBIT ^{4f}

FORT SMALLWOOD ROAD COMPLEX • P.O. BOX 1475 • BALTIMORE, MARYLAND 21203

QUALITY ASSURANCE

January 11, 1985

Mr. Donald W. Waitkus
Supervisor, Quality Assurance
INRYCO, Incorporated
7200 S. Narragansett Avenue
Bedford Park
Chicago, Illinois 60638

THIS IS
A COPY.

SUBJECT: Quality Assurance Surveillance of
INRYCO, Incorporated
QA File: QAG 59--II 84--Surveillance 01
Our Ref: QAO L-0086

Dear Mr. Waitkus:

Attached is the report of the Quality Assurance Surveillance performed December 19, 1984 at your facility in Bedford Park, Chicago, Illinois.

There are no Findings or Recommendations associated with this Surveillance.

Please call me at (301) 787-5122 if you have any questions.

Very truly yours,

E. F. Wasson
Senior Engineer
Quality Assurance Department

EFW/bls

Enclosures

cc: R. F. Ash	M. R. Manson
R. M. Douglass	P. F. Robinson
L. F. Dudek	L. B. Russell
M. J. Gahan	R. L. Winchester
J. E. Macklin	

December 17, 1976
J. Dwyer
Review of Audit
Page two

THIS IS
A COPY

EXHIBIT 5

While this could represent a serious breakdown in quality had any dimensional or procedural taken place, in fact no quality problem exists as the changes were only to accommodate typographical errors on the drawings.

At this time it is felt that there is no need for W.C.S. to have a controlled copy of the entire Q.C. Manual and as a result we will send 2 additional copies of the current drawings and procedures which must be attached to the shop work tickets.

Recommendation 1: Listed as 2 on the Audit Finding Report Form, concerning personnel certification. We will accept the letter responding to the Bechtel Audit finding as satisfactory for the purposes of this audit. However, in future audits we will expect to see formal documentation of personnel certification, as pressure is being brought to bear on us for satisfactory evidence of compliance.

We will require a formal response from W.C.S. that the previous items will be corrected and the approximate date for that correction.

Lastly, on the next audit we would like to visit your vendor providing the various threading operations to verify compliance with procedures.

John, I would like to extend my personal thanks for the hospitality, courtesy and cooperation provided at your fine facility during this audit. If you have any questions regarding the items in this letter, don't hesitate to give me a call.

Sincerely,

Don Waitkus ✓
Supervisor, Quality Assurance

Encl.

/jn

cc: G. King, G. Chadha, H. Hendrickson, C. Stelzer, R. Sierzega, J. Heise
File



REPLY TO: 19113 SOUTH HAMILTON AVENUE POST OFFICE BOX 440
GARDENA • CALIFORNIA 90248 • TELEPHONE AREA CODE 213-321-1571
CALIFORNIA CONTRACTOR'S LICENSE No. 162022 B-1

Vendor Audit.
Response
A505

THIS IS
A COPY

28 Dec 76

INRYCO, INC.
P.O. Box 1056
Melrose Park, Illinois 60160

EXHIBIT 6 of 2

Attention: Mr. D. Waitkus

Subject: Audit findings Farley Nuclear Plant
WCS Job 1-1/652

Dear Don:

In response to your audit findings of 15 Dec 76, we have taken the following corrective actions:

1. Drawings and procedures not up to date. A copy of Inryco Quality Control Manual, Rev. 3 dated 22 Oct 76 has been issued to the shop. If revisions are made, this manual will be updated.
2. Personnel Certification
A memo has been written to file documenting the certification of Mr. Jacobson as an inspector. (copy attached).

This should satisfy the actions recommended on your Audit Report. If additional information is needed or if you have any questions, please give me a call.

Sincerely,

WESTERN CONCRETE STRUCTURES CO., INC.

John M. Dwyer
Manager, Nuclear Division

JMD:ace

enc.



THIS IS
A COPY

EXHIBIT 6 ^{2 of 2}

To: File
From: John M. Dwyer
Subject: Personnel Certification
Robert Jacobson
Date: 23 Dec 76

Mr. Jacobson is a graduate of Sacramento State College with a B.S. in Mechanical Engineering. Mr. Jacobson was selected to perform inspection duties for nuclear hardware manufacture. The Q.A. Manual and Q.C. Procedures were thoroughly reviewed and discussed with Mr. Jacobson by the Q.A. Manager. Additional time was spent with him in the shop with inspection equipment and procedures. The Chief Engineer accompanied Mr. Jacobson to vendor shops for outside inspection procedures.

INRYCO, Inc.
Post Tensioning Division
Box 1056, 1560 North 25th Avenue
Melrose Park, Illinois 60161

312 379 9600

*Vendor
Qualification*

EXHIBIT 7 of 2



Inryco

August 30, 1977

**THIS IS
A COPY**

Western Concrete Structures
19113 South Hamilton Avenue
Gardena, California 90248

Attention: J. Speransky
Manager, Nuclear Division

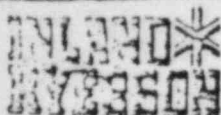
SUBJECT: Audit of 8-15-77
P. O. 21T781-5 revised 4-13-77
P. O. 21T782-1 revised 4-13-77

Dear Jerry:

After a review of the contract documents and applicable portions of the Inryco Quality Control procedures for the fabrication of various anchorage components, no program deficiencies have been noted.

During the review of your Quality Assurance Manual, I noted a deficiency within your section of Audit procedures. Criteria 18 of 10CFR50 Appendix B, requires that audits be planned and periodic, and you do not address yourself to this requirement. Secondly, you have not performed any internal audits of your quality assurance or quality control programs to verify implementation and compliance with your programs and 10CFR50.

While contractually, you have performed satisfactorily for those portions of the program audited, we find that in order to maintain your status as a qualified vendor with Inryco Incorporated, it will become necessary for you to correct your program deficiencies by providing the necessary audits and reporting responsibility, in order to maintain your qualified status for any future work.



CONSTRUCTION
PRODUCTS
COMPANY

781-1208

fig 5

EXHIBIT 7 ^{2 of 2}

AUDIT FINDING REPORT FORM

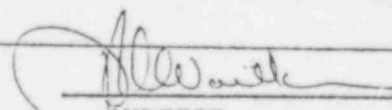
LOCATION: Western Concrete Structures DATE: 8-15-77
(SHOP) OR (VENDOR'S NAME)

ITEM: Bushings - Anchor Heads

THIS IS
A COPY

FINDING OR RECOMMENDATIONS:

None


AUDITOR

RECOMMENDED ACTION:

None - Continue Operations

RESOLUTION:

DISTRIBUTION:

O.A. SECTION
O.C. SECTION
OPERATIONS
ENGINEERING
PROCUREMENT
VENDOR


QUALITY ASSURANCE
REPRESENTATIVE

8-15-77

OK

Audit No. _____

WCS

Date _____

**THIS IS
A COPY****G. IDENTIFICATION and CONTROL of
MATERIALS, PARTS and COMPONENTS (continued)**

<u>Reference</u>	<u>Yes</u>	<u>No</u>	<u>N/A</u>	<u>Remarks</u>
3. Are identification and control measures designed to prevent the use of incorrect or defective material, parts, and components?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	QP 8-3.2
Steel Stamped 4. Where identification marking is used, are the markings clear, unambiguous, and indelible, and applied in a manner as not to affect the function of the item?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Check Mat'l GT179 GT409 GT403
5. Does the quality program provide traceability of items, as required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

H. CONTROL OF SPECIAL PROCESSES

INRYCO QC	1. Are measures established and documented to assure that special processes are accomplished under controlled conditions in accordance with applicable codes and standards?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Heat Treat M.I. #6875D
	2. Are only qualified personnel and procedures used to accomplish special processes?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Personnel? Procedures OK
	3. Does the qualification of personnel, procedures and equipment comply with the requirements of applicable codes and standards?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Equipment OK Procedures OK Personnel?
	4. Is documentation maintained for qualified personnel, procedures, or equipment in accordance with requirements of pertinent codes and standards?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Furnace Charts Supplied to Inryco

COMMENTS:



CONSTRUCTION
PRODUCTS
COMPANY

THIS IS
A COPY

EXHIBIT 8 2012

SHOP & VENDOR AUDIT CHECK LIST

VENDOR: Western Concrete Structures DATE: 8-15-77
ADDRESS: 19113 S. Hamilton Ave.
Gardena Cal. 90248

CUSTOMER P.O. NO. 21T781-5
INRYCO CONTRACT NO. 21T781-5 12-12-75 revised 4-13-77
CONTACT & POSITION J. Speransky Mgr. Nuclear Div.
COMPONENT MFD. Bushings - Anchor Heads
PRODUCTION STATUS Appx 30%

DOCUMENTS:

Q.C. PROGRAM Inryco
DRAWINGS 170W1A 170W1B 170W15
SPECIFICATIONS Inryco 1649 and 1677
RECEIVING OK all RTs verified by Inryco Q.A.
CERT. OF INSP. Heat Code HX120 to HX149
* PERSONNEL CERT. R. Jacobson - Inspect. Supv. 12-12-76
TOOL & GAGE CONT. RECORDS: Cal 2-4-77 NBS 21312/215167 - 6-2-77
INSTRUMENTS: Wilson Hardness M-2-369 - #033 6-4 Acme Stub Go

INPROCESS INSPECTIONS Shop Heads HX120 to HX149 also GT
MATERIAL CONTROL OK steel stamped GT179 - GT409 - GT403 on floor
STORAGE & SHIPPING OK wooden crates

** NON-CONFORMING ITEMS None Outstanding

COMMENTS: * New training Inspector Craig Spivak

** Note: NCR 001 written for heads GT281, 316, 421 and 304
which is too hard to drill - Material scrapped

DISTRIBUTION: Inryco Q.C. Program
PTP 4.2 A
MIL H 6875D
Q.A. SECTION
Q.C. SECTION PTP 5 A
SHOP MANAGER QCP 3.1 A
FOREMEN QCP 3.2.B 1
PROCUREMENT QCP 3.3 2
VENDOR QCP 4 3
QCP 6 3
QCP 7 3
QCP 9 2

INSPECTOR: [Signature]
DATE: 8-16-77

Audit No. _____

WCS

Date

8-15-77

OK

O. CORRECTIVE ACTION (continued)**THIS IS
A COPY**EXHIBIT 9ReferenceYesNoN/ARemarksQAM
\$ Inryco
QC

3. f. A review and approval to determine adequacy of actions taken?

— — —

None
Available

4. Is there a follow-up system for over-due corrective action replies?

✓ — —

QP 18 3.2.3

5. Is a report made to higher management regarding open or delinquent corrective action replies?

✓ — —

✓

P. QUALITY ASSURANCE RECORDSQ.A.M
\$ Inryco
QC

1. Do quality assurance records include at least the following:

- a. Operating logs and the results of reviews?

✓ — —

- b. Inspections?

✓ — —

- c. Tests?

— — ✓

- d. Audits?

✓ — —

- e. Monitoring of work performance?

✓ — —

- f. Material analysis?

— — ✓

Refer
HX Certification
of Inspections

8-12-77

Inspector
Craig Spievals

✓

2. Do records include closely related data such as qualifications of:

- a. Personnel?

✓ — —

R. Jacobson
12-23-76

- b. Procedures?

✓ — —

Inryco

- c. Equipment?

✓ — —

COMMENTS:

Inspector now in training



REPLY TO: 19113 SOUTH HAMILTON AVENUE POST OFFICE BOX 440
GARDENA • CALIFORNIA 90248 • TELEPHONE AREA CODE 213-321-1571
CALIFORNIA CONTRACTOR'S LICENSE NO. 162022 B-1

25 May 79

INRYCO INC.,
Post-Tensioning Division
1560 North 25th Avenue, Box 1056
Melrose Park, ILL 60161

EXHIBIT 10

Attention: Mr. Harry F. Hendrickson
Supervisor, Q.C.

**THIS IS
A COPY**

Subject: Defective Anchorages
Inryco P.O. #21T781-5/21T782-1
WCS Job #1/1-764 and 1/1-798

Dear Mr. Hendrickson,

After receiving your call, Bob Jacobson immediately contacted Downey Heat Treating and requested the necessary data. To date we had no response from them and it is very unlikely that there will be one in the future.

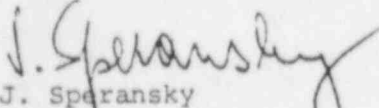
Last November, all of a sudden, we ran into the problem of web cracking and as a result had to scrap (36) pieces. After looking into the problem and having had one field head tested by Durkee's Lab (Test Report enclosed), we decided to change vendors. Since then all heat treating is being done by Varco International, who not only do an excellent job of heat treating, but also back it up with good quality documentation. Also our Q.C. Department has been instructed to check each piece for web cracking, therefore, it comes as a surprise that one field head with cracked webs was not detected.

You can be assured that on future work, we will maintain close surveillance with regard to the web cracking and other areas pointed out in your letter.

Regarding the problem of holes drifting together from top to bottom, we would like to get more information on it, or even better, have the anchor head returned to us so that we can better analyze the problem and prevent it from happening in the future. In the gun-drilling operation this is almost impossible to happen due to the nature of it. The drawing calls for a true position tolerance of .035", by how much was this tolerance exceeded?

Sincerely,

WESTERN CONCRETE STRUCTURES CO., INC.


J. Speransky
Manager - Nuclear Division

JS/ss

Enc.,



REPLY TO: 19113 SOUTH HAMILTON AVENUE • POST OFFICE BOX 440
GARDENA • CALIFORNIA 90248 • TELEPHONE AREA CODE 213-321-1571
CALIFORNIA CONTRACTOR'S LICENSE NO. 162022 B-1

6 Nov 78

EXHIBIT 11

INRYCO, INC.
Post-Tensioning Products Division
P.O. Box 1056
Melrose Park, Ill. 60161

**THIS IS
A COPY**

Attn: Mr. Don Waitkus

Subj: Byron/Braidwood Vendor Qualification
Your Order No. 21T781/782
Our Job No. 1/1-764 and 798

Dear Don:

In order to give us greater flexibility with regard to the heat treating of your anchorages, we have surveyed and audited a new vendor, VARCO INTERNATIONAL.

Our conclusion is that VARCO is well qualified to perform the heat treating and we have added them to our Qualified Sub-tier Supplier List, copy of which is enclosed. Also enclosed is a copy of your Shop and Vendor Audit Check List filled in by Bob Jacobson.

Sincerely,

WESTERN CONCRETE STRUCTURES CO., INC.

B. Jacobson, For
J. Speransky
Manager, Nuclear Division

JS:nl

Enc.

C.S. Gohert of Surge 11-17-78



To: Gene Davis

From: Don Waitkus

Date: August 18, 1980

SUBJECT: SUMMARY OF WCS AUDIT

**THIS IS
A COPY**

My recommendation is that we terminate WCS as a source of supply for anchorheads or other services. While I found only two findings, I did note that WCS does not maintain the requirements of a Q.A. program let alone the controls of their subtier suppliers and documentation. We cannot afford to stand and watch over their shoulder as they continue to lose the required controls.

The WCS staff is cut to a minimum and only one inspector is available to check their incoming and fabricated products as well as our anchorages. Bob Jacobson acts as their Q.C. Supervisor, but spends less than 10% of that time involved in Q.C. activities. This, no doubt, explains the poor control of paper. They do not review or verify any of the heat treating documents, which explains why the last document package was not provided according to PT 5.2.A.

The problems with the heat treating records at Varco have been or are in the process of being corrected. It was purely an oversight on their part that the proper documents were not submitted. They will develop an internal procedure to remedy the problem in the future. Their records are such that they can accurately trace the anchorages to the heat treating batch.

We are not completely without fault with regard to the type of accuracy we require with the heat treating records. No one has formally notified WCS as to the type of information we are looking for or the reason for that information. Hopefully, PT 5.2.A will resolve that problem.

Anchorage Analysis

WCS does not maintain accurate records as to the location or quantity of anchorheads they have at various vendors, nor do they control the return on a day to day basis. They know that a quantity was sent out and that that quantity will be accounted for at the completion of that operation.

The following anchorages are in the WCS shop:

Shophead - Heat SD - 610 - blanks, turned and faced.
 39 - drilled
 15 - scrapped, holes misaligned

Bushing - Heat SC - 301 - finished, ready to ship.

Fieldhead - Heat RY- 126 - finished, ready to ship.

Seen at Varco. Heat SC - 24 in austenitizing furnace
 24 austenitized
 24 awaiting the furnace

INRYCO, Inc.
Post Tensioning Division
1560 North 25th Avenue, Box 1056
Melrose Park, Illinois 60161

312 379 9600

791
78~ heads
859
781



Inryco

EXHIBIT 13

October 13, 1980

**THIS IS
A COPY**

Western Concrete Structures
19113 Hamilton Avenue
Gardena, CA 90248

Attention: Mr. Bob Jacobson
Supervisor, Quality Control

SUBJECT: Audit Findings: Audit V80-782-1 WCS
Audit Results: Audit V80-782-2 Varco Int'l.

Dear Bob:

Enclosed are report forms from both audits. No action is required of the Varco audit.

It will be necessary for you to respond to the observation and the finding. To close both items, send me a copy of your approved vendor list with Missile Alloy Steel Cutting appearing on it and a copy of the new certification of cablibration for the Venier gauge 017. Inryco will correct Finding number 3.

Please respond within 30 days of receipt for these items. Also note that this audit does not constitute endorsement or acceptance of those portions of your program that were not audited.

Thanks again for the cooperation and hospitality extended to me during the course of the audit.

Sincerely,

Don Waitkus
Supervisor,
Quality Assurance

DW:lj

Enclosures

cc: E. Davis
R. Sierzega
H. Hendrickson
File 782-1208